GRUMMAN
planenews

A bimonthly publication for Grumman Aerospace Corporation employees

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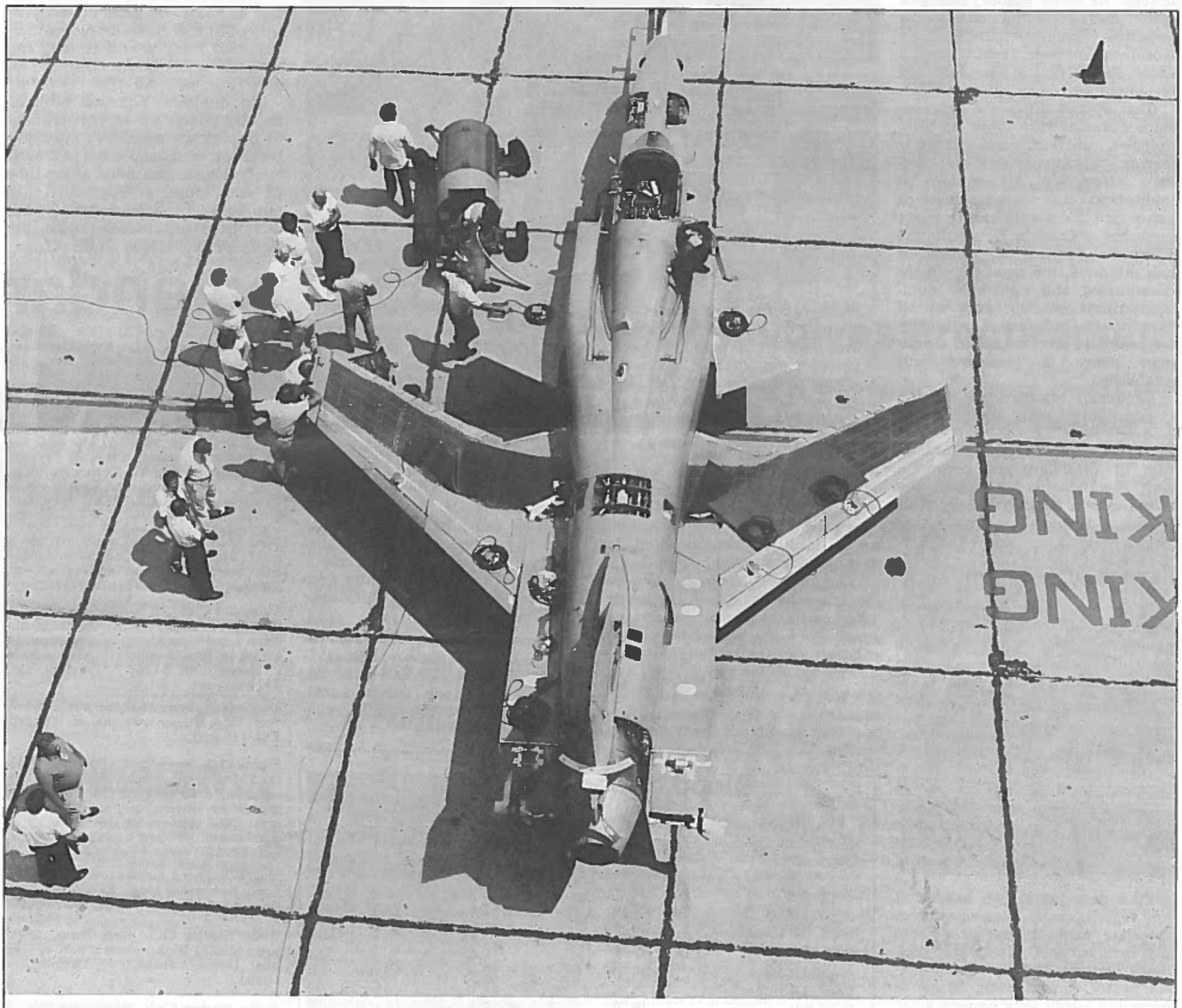

X-29A undergoing full 'flight physical'

In preparation for its first flight later this year, the X-29A Advanced Technology Demonstrator aircraft has recently undergone rigorous tests at Calverton. The X-29 rollout ceremony will be held there this Monday, August 27. Guest of honor will be Vice President George Bush. See article on page 7.

news briefs

Pacific effort

Grumman Corporation has begun looking into the feasibility of establishing permanent, long-term industrial relationships in the Pacific region with initial emphasis in Japan. "The purpose of such relationships would be to more appropriately position our core technology to serve military markets while also providing outlets for potential commercialization in world-wise markets," said Chairman Jack Bierwirth, in a July 30 statement.

The opportunities for relationships cover a wide range of technologies, markets and industry sectors. "Significant time and careful effort will be required to understand the infrastructure of Japan and the region and to select industrial partners," continued Bierwirth. "During all phases of this initiative, the need for closely coordinated and controlled communications on the part of all elements of Grumman is extremely important so that a unified Grumman image is presented and established."

Grumman International has the responsibility and authority to achieve these goals, announced Beirwirth. Additionally, coordination of subsidiary and corporate staff requirements to support the initiative will be provided by Rolf Larson, Grumman Corporation vice president.

In case of emergency

It is a frustrating experience when you know what to do in an emergency situation, but are unable to properly attend to it — due to a lack of necessary materials. Grumman's Medical Department is taking steps to assure that this does not happen in amputation cases.

By September, the Medical Department will have distributed amputation preservation kits to 14 plants throughout Grumman. These kits are equipped with medicated solutions and coolants that will preserve the amputated part until it can be replanted.

"An amputation can happen at any time," says Dr. Michael Abbene, associate medical director. "From my own surgical experience, accidents like this happen when a person is not concentrating on his or her job. Usually they happen when skilled personnel allow their minds to wander to other things — such as personal problems, vacations, or petty annoyances."

If an accident happens, the patient's condition must be stabilized. The medical team will intravenously inject fluids, antibiotics, and tetanus prophylaxis.

The amputated part will be cleaned in an isotonic solution, wrapped in sterile gauze, and placed in a plastic bag. The bag is then put in an insulated cooling chest for transportation to the hospital.

The following steps should never be taken: *never place the amputated part on ice or in dry ice, never float the amputated part in a bag of solution, and never use any antiseptics on the part.*

"Everyone on the shop floor should know that the amputated part can be saved in most cases. It depends on how it was cut, and how it was handled during transportation," says Dr. Abbene. "What materials provided in the kits are there to be used, rather than something of questionable cleanliness." The guidelines for these kits were provided by the American College of Surgeons.

Amputation preservation kits will be available at nurses stations in Plants 1, 2, 3, 4, 5, 6, 18, 28, GHQ in New York, Stuart and St. Augustine (Florida), Milledgeville (Georgia), Houston (Texas), Glen Arm (Maryland), and Sturgis (Michigan).

Picking up the keys. *Acceptance of the first EA-6B ICAP-2 production aircraft (P-102) to be ferried to Naval Air Station, Whidbey Island, was made on July 24 at Calverton. Capt. James R. Charles, NAVPRO, presents the symbolic key to the crew, led by COMO William D. "Zip" Zirbel (3rd from left), Cdr. Mike Merickel (L), Lt. Tom Fedele (2nd L) and Cdr. "T.J." Williams. On hand for the presentation was the EA-6B Program Vice President, Dan O'Neill (R).*

Blood donor's calendar

Just a reminder: the Grumman Blood Program needs your support. Here is an up-to-date listing of where and when you can donate during September.

Sept. 5,6	Pl. 1	8:15 a.m. — 1:45 p.m.
Sept. 12,13	Pl. 2	8:15 a.m. — 1:45 p.m.
Sept. 12 (night)	Pl. 2	4:45 p.m. — 9:45 p.m.
Sept. 17	Pl. 8*	8:15 a.m. — 1:45 p.m.
Sept. 18,19	Pl. 6	8:15 a.m. — 1:45 p.m.
Sept. 18 (night)	Pl. 6	5:45 p.m. — 10:45 p.m
Sept. 20	Pl. 7	8:15 a.m. — 1:45 p.m.
Sept. 18	Pl. 110	8:45 a.m. — 1:45 p.m.
Sept. 24	Pl. 242*	8:15 a.m. — 2:45 p.m.
Sept. 25	Pl. 247*	8:45 a.m. — 2:45 p.m.
Sept. 26	Pl. 29*	8:45 a.m. — 2:45 p.m.
Sept. 25	Pl. 43	8:15 a.m. — 1:45 p.m.
		4:45 p.m. — 9:45 p.m.

*Mobile unit

Desk bonanza

Grumman Property Disposition has plenty of used metal desks for sale to Grummanites.

The desks are double pedestal in grey and tan. Each is $30 plus tax.

Interested employees should obtain an Employee Sales Form (GAC No. 5531) at their Employee Services (ES) office, fill it out, and mail it to Property Disposition, A04-17.

Do not call. You will be notified by phone for an appointment to inspect the desk. You must pay by check or money order and must remove the merchandise at the time of sale. Property Disposition will not hold any merchandise. Photos and more information about the desks are available in all ES offices.

calendar

Aikido Club: (Martial Arts) every Wed., 5 p.m., Recreation bldg. Beginners class. Guests welcome. M. Brooks, Ext. 115-6171/H. Brondo, Ext. 5-2719

Amateur Radio Club: every 3rd Wed. of the month. Meeting held in the white shack on top of Plant 5 by the blue ball, 5 p.m. B. Wengler, Ext. 50188.

Chess Club: every Fri., Recreation bldg., 5 to 11 p.m. Beginner to Expert, guests welcome. K. Marley, Ext. 54901/N. Corso, Ext. 59600.

Coin Club: (Calverton) every Fri., noon lunch, Plant 6, A-6 Action Center conference room. Grumman employees welcome. N. Evangelides, Ext. 117-7242.

Computer Club: 1st Mon. of every month, Recreation bldg., 7 p.m. Computer discussion and demonstration/beginner to advanced programming. Guests welcome J. Hayne, Ext. 54945/P. Frumkin, Ext. 55134.

Dance Club: every Wed., 5-8 p.m., Recreation bldg. Guests welcome. S. Koppell, Ext. 115-3800.

Karate Club: every Tues. and Thurs., Recreation bldg., beginners 4:30 to 5:30, advanced 5:30 to 7:00 p.m., black belt instructors, physical and mental development. New students at the beginning of each month. Guests welcome. T. Ortiz, Ext. 58497.

Model Railroad Society: every Wed., 7 p.m., Recreation bldg., Regular meeting. Guests welcome. R. Muntz, Ext. 56865.

Roller Skating Club: every Thurs., Levittown Skating Rink, lessons at 6:30 to 7:30 p.m. Guests welcome. H. Denen, Ext. 52291.

Roller Hockey Club: Meets every Wed., 6 p.m. For more information, employees can call Arnie Pritchett on Ext. 349-5081.

Stamp Club: First three Wed. of every month, 5-6 p.m., Plant 35 cafeteria, trading sessions and discussions. S. Hoops, Ext. 53926.

(Continued on page 11)

Vassallo heads up new Product Ops.

In a move to further strengthen its broad production activities, Grumman Aerospace has consolidated all responsibility centers, Manufacturing Operations, Quality and Safety Operations and Material Management into a new Product Operations organization under Senior Vice President Phil Vassallo.

Grumman Aerospace President George Skurla calls this latest corporate realignment "timely and essential" in order that the company "better tackle the tasks at hand today — and continue its successful pursuit of future business opportunities.

"The formation of Product Operations will now provide for an orchestration of our Long Island and off Long Island operating activities," continues Skurla. "In turn, this will improve productivity and efficiency.

"We now have a management focal point for tying together the various organizational components and geographic locations where production activities occur," says Skurla.

"Combining these diverse capabilities into one well-coordinated organization should foster a closer working relationship for those in the production world. It should also ensure a more effective distribution of work, material and manufacturing resources in the various responsibility centers," stresses Skurla.

He also believes the consolidation "will enable us to further drive down our costs while continuing on-time delivery of quality products to our customers."

As head of this new organization, Vassallo is aware of the challenges facing Product Operations in the upcoming months. "This company has finely-tuned operations already in place," says the senior vice president. "Our first objective is to further improve those operations to their fullest potential."

He admits heading up Aerospace's 14,000 work force of Product Operations is a broad and challenging assignment. "We have the potential to do even bigger and better things," says Vassallo. "Our goal is to exploit those potentials by utilizing Product Operations' inherent capabilities."

Continuation of duties

Vassallo will continue to serve on the Corporate Source Selection Committee and will retain this co-chairmanship of the Grumman Aerospace Policy Advisory Committee on International Industrial Cooperation Programs.

The new head of Product Operations began his Grumman career in 1957 as a structural engineer. In the early Sixties, he travelled around the country as part of an engineering-manufacturing-procurement team, dealing with suppliers for the F-111 and Lunar Module programs.

Moved to Machining Ops

He later moved to Machining Operations where he was named assistant to the director in 1967, deputy director in 1969 and the following year director.

Vassallo's next assignment was as deputy director of Manufacturing Operations, a position he held from 1973 until November 1974 when he became director of Corporate Procurement Operations. In 1976, he was elected vice president of Corporate Procurement Operations; in 1979, he was elected a senior vice president. The following year he was named head of Corporate Material Operations, a combination of Corporate Procurement and Material Management.

Phil Vassallo

He is a graduate of Manhattan Technical Institute. In 1974, he completed the Program for Management Development at Harvard Business School.

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Editor
Kathleen Housley Ext. 53293

Associate Editors
Joe Pititto Ext. 55119
Robert Sample Ext. 55118

Editorial Assistant
Bernadette Gately Ext. 58999
Mail stop: C14-05

Latest realignment involves Procurement

Grumman Aerospace has made a major realignment of its business functions to strengthen the company's competitive position for the future, according to Grumman Aerospace President George Skurla.

To adapt to the ever-changing business environment, Skurla recently announced that Corporate Procurement Operations has been aligned with the Business and Resources Management organization. Vice President Bob Simon, named head of Corporate Procurement Operations, reports directly to Bob Myers, Senior Vice President for Business and Resource Management.

"This realignment will enable the company to better meet its contractual agreements," stated Skurla.

Bob Simon

He notes that customer demands for cost containment and more competitive bidding have resulted in Grumman negotiating more and more fixed-price contracts.

Case in point

For instance, the F-14D and A-6E Upgrade programs are both fixed-price development contracts. "The budget is tight for these two development contracts," stated Skurla. "With the F-14D alone, over 60 percent of the contract dollars will be subcontracted, and about 40 percent for the A-6.

"The contracts will extend the production of these vital programs into the late Nineties," indicated Skurla. "But they will only guarantee our future if we manage them well.

"Large fixed-price development programs like the F-14D and the A-6E Upgrade place a significant management burden on a prime contractor like Grumman Aerospace," continued Skurla.

"We are a high tech firm in which a good percentage of our contract dollars are earmarked for goods and services from our subcontractors," he said. "Aligning Corporate Procurement Operations and Business Operations — which includes such functions as Contracts, Estimating and Pricing — under one organizational head will give the company better overall control and visibility over its contract dollars.

"Grumman Aerospace has many diverse, complex programs under way," added Skurla. "At present, about 30 to 40 percent of the total costs goes to our subcontractors. And, in many instances, the successful control of those supplier costs is a big factor in our bottom line results. We believe this combination will give us better management control of all our resources."

Bob Myers

Myers commended the Grummanites in Corporate Procurement Operations for their continued commitment to cost containment. "I'm delighted that Procurement Operations will be working for me," commented Myers. "We have

(Continued from page 3)

GAC to design, produce JVX tails

Grumman Aerospace has won the first part of a multimillion-dollar subcontract to design and fabricate the tail section of the Joint Services Vertical Lift Aircraft (JVX). The award was announced by the team of Bell Helicopter Textron, Inc., and Boeing Vertol Company, the Navy's prime contractors for the JVX.

Grumman's initial subcontract is worth $2.5 million and includes engineering work, technical drawings, and test reports. It is scheduled for completion in late spring, 1985. A technical assistance portion for engineering support will be separate and will run concurrently. The full-scale development phase is scheduled to begin next June and run through 1987. Total value for the three-phase, three-and-one-half year subcontract is approximately $20 million.

The JVX is a multimission, tilt-rotor aircraft that will be flown by all branches of the armed forces. This revolutionary aircraft combines the hovering and low-speed flight characteristics of a helicopter with the cruise and high-speed capabilities of a turboprop airplane. The aircraft's twin engines and rotors point upwards during takeoff and landings, and rotate forward during flight.

The JVX is currently in the preliminary design stage. It will bear a lot of similarity to the XV-15 tilt rotor prototype produced by Bell Helicopter and demonstrated at the Paris Air Show in 1981. It will, however, be larger — the JVX is expected to weigh approximately 40,000 pounds, compared to the XV-15's 15,000.

The aircraft will utilize substantial amounts of high-strength composites, such as graphite and kevlar — particularly in the Grumman-produced empennage. Grumman design and engineering work will take place at Bethpage and at Boeing Vertol in Philadelphia. The empennage components will be fabricated at Milledgeville (Ga.), while final assembly will be done at Stuart (Fl.).

The Grumman program manager for the JVX will be Bill Brown, who has an extensive background in composites and has worked on numerous projects including the F-111, Boeing 727, and Boeing 757.

"This award is important since it is another step in our strategy to become a major subcontractor of state-of-the-art composite structures to the aerospace industry," says Grumman Aerospace President George Skurla, "and it expands our business with The Boeing Company." Grumman is a major subcontractor on the Boeing 767 and 757 passenger airliners.

Tom McGrath, vice president for Subcontractors and Commercial Products, adds that the JVX has a wide range of potential uses. "This award is significant because it not only has the potential for substantial military production, but also could have commercial applications as a commuter aircraft."

The JVX empennage is a complex composite structure with two vertical stabilizer/rudder assemblies, connected by a central horizontal stabilizer/elevator assembly. The tail section will have integral antennas, deicer boots, and collision and formation lights. It will be constructed with internal ribs and will be connected to the fuselage by a splice interface frame.

Hybrid. *The JVX takes off and lands like a helicopter with its twin rotors pointed up. In flight, however, the rotors can turn forward, giving it the characteristics of a turboprop plane.*

The aircraft will be capable of carrying up to 24 troops or 10,000 pounds of cargo. Its vertical takeoff and landing (VTOL) capabilities let it go where conventional planes cannot, such as a small jungle clearing or beach.

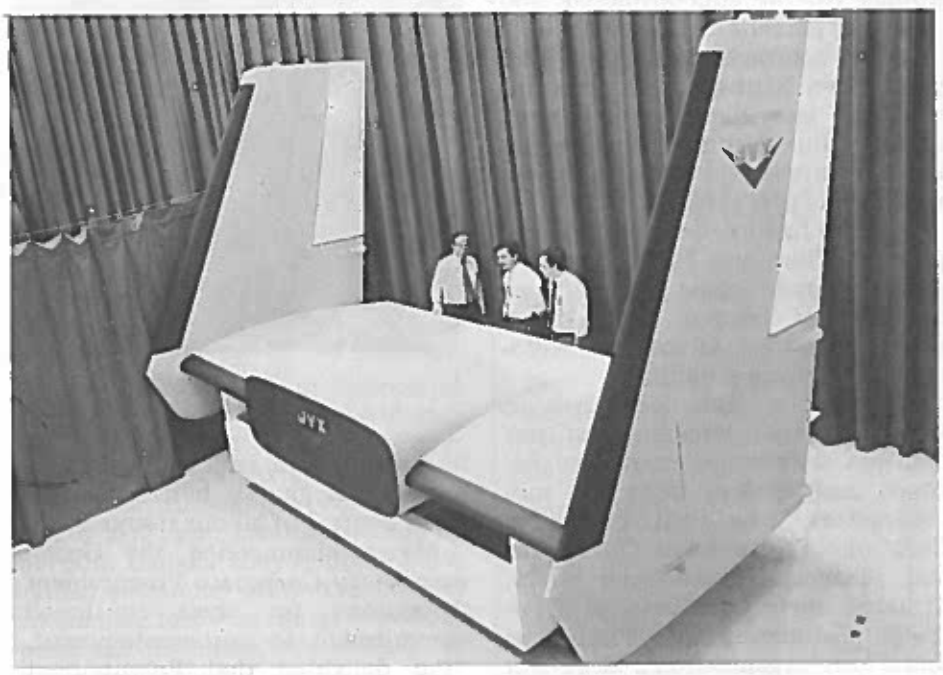
It will be fast, too, cruising at speeds of over 300 knots (roughly 345 m.p.h). In addition, it can fly long distances without refueling, and would be a significant addition to the carrier-based aircraft fleet.

Kevin Dembinski, marketing manager for Aerostructures in Subcontracts and Commercial Products, notes that over 900 JVXs are expected to be produced for the Defense Department by the early part of the Twenty-first Century. Of those over half will be for the United States Marine Corps, which will use the planes for amphibious assault.

The JVX will also be utilized by the Navy for combat search and rescue, by the Air Force for special operations, and by the Army for multi-mission transport.

With its rotors tilted at an angle—neither fully up nor forward — the JVX could fly very close to the ground, yet fast, eluding radar.

Among its nonmilitary uses, many experts believe tilt-rotor technology could play an important role in the growing market for short-distance air travel. Such an aircraft could land directly at an urban heliport.



Composite structure. *Nick Corvelli, Frank Felicetti, and Jim Sicari of the JVX proposal team view the full-scale mockup of the JVX tail produced by the Grumman Product Development Operations Center (PDOC). It was submitted in conjunction with Grumman's proposal.*

Simon named vp-procurement

(Continued from page 3)

worked closely with Procurement management over the past few years.

"In particular, Procurement distinguished itself during recent price negotiations with our subcontractors for fiscal year 1984 contracts. They handled some very tough but successful negotiations with our subcontractors in response to the Navy's demands," cited Myers.

Throughout his career, Simon has been heavily involved in the procurement world. Prior to joining Grumman in 1967, he worked in purchasing for 11 years at General Instruments Corporation in Hicksville, N.Y.

He began his Grumman career as a subcontract administrator on the EA-6B program. He was later promoted to subcontract project manager and then to procurement manager for the company's Electronic Warfare programs — the EA-6B Prowler and the EF-111A Raven.

In April of 1977, Simon became deputy director of Central Procurement and served in that post until February 1978 when he was appointed special assistant to the vice president of Corporate Procurement Operations. In August 1981, Simon was promoted to director of Corporate Procurement. He was elected a vice president of Grumman Aerospace in June of this year.

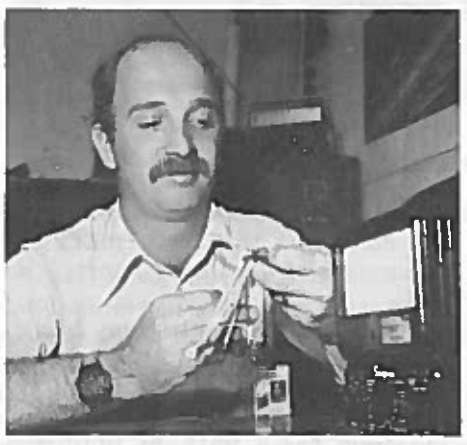
Simon holds a bachelor's degree in electrical engineering from New York University. He recently completed the Massachusetts Institute of Technology (MIT) Sloan Fellowship Program for Senior Executives.

Joseph Komp

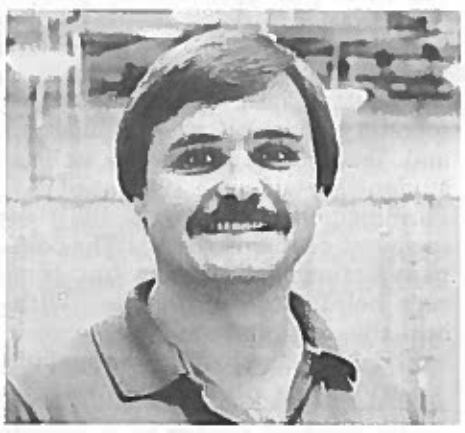
Mary Contessa

James Reese

Clayton Hollister



Richard Stillwell



Harold Brown

Carolyn Hogan

Suggesting a better way pays off

A quarter-of-a-million dollars is a nice yearly savings for any company, and thanks to recent cost saving Project Sterling suggestions, Grumman was able to do exactly that.

Seventy Grummanites offered suggestions that saved the company $252,751. One suggestion alone saved the company $145,343 and as an award for such a large amount, Joseph Komp, a leadworker in Plant 2, earned $3,950.

Joseph suggested that bolster plates be installed on hammer dies, to eliminate the use of lead bases, and to use cork to level bottom dies off the plates. This eliminated the need to machine die bases. "I originally suggested this idea in 1980," Joe said. "A lot of things had to be looked into before putting it into use. The engineers here were very helpful. Everyone cooperated . . . it had to be planned just right."

Cooperative group

With a cooperative group effort, it proved to be successful. "The idea worked, and it benefited the entire department," Joe said.

Joe received $3,950, and when asked what he had planned to use it for, he replied, "I'm going to save it for a rainy day." Joe has made over 30 suggestions during his 29 years at Grumman.

• Mary Contessa earned $1,055 for her first Project Sterling suggestion. Mary, a tool store attendant in Plant 3, suggested that a computer-generated list of invalid job charges be supplied to the work center dispatcher. This would allow the dispatcher to make the necessary changes in work orders as they are received in the work center. Mary said, "I've had the idea for a long time, and I put the suggestion in last year. Keeping the jobs moving is a priority and the computer list will save a lot of time."

Mary's idea will save the company $21,131 a year. "I'm having a baby, so the money came at the perfect time. I will use it to buy a crib and a dresser."

James Reese of Grumman Houston Corporation made a suggestion that earned him $860. James, a C.S.A. (central set-up area) tool crib attendant, made a hydraulic bleeder that would eliminate the need for the company to buy commercial bleeders, which cost about $21,000. "I built a hydraulic bleeder by using various parts of other tools. The only thing we had to buy was a filter."

James' hydraulic bleeder will save the company $8,895 in the first year. He intends to invest his award money.

Clayton Hollister, a leadworker in Plant 4, suggested installing interface connectors on WRA (weapons replaceable assembly) extenders. "This would reduce downtime and repair time on the computers," Clayton said, "The computer needed better pipe connectors with better pins. This way it would not be as susceptible to damage."

Clayton's suggestion will save Grumman $14,840 in the first year. Clayton was awarded $770, and when asked what he was going to do with it, he replied, "I'm putting $370 in my Christmas club, and I'm giving $400 to my wife."

Stop burn-outs

Richard Stillwell, an electronic Technician leadworker in Plant 2, suggested a way to stop burn-outs and short-circuits of diffusion pumps. Richard said, "Wires were getting hot, therefore the expansions and contractions loosened the connectors, which caused the pumps to burn-out or short-circuit. My idea was to weld the wires onto the terminal lugs (connectors)."

Richard won $755 for his Project Sterling suggestion, which will save the company $13,025 in the first year. Richard has already spent his award money as part of a down payment on a new house.

Carolyn Hogan, a key person, and Harold Brown, a leadworker in Plant 66 Milledgeville Georgia, teamed up for a Project Sterling suggestion. Both Carolyn and Harold work in Fiberglass Layup where there had been some difficulties on the S-76 stabilizer. Carolyn said, "Resin was flowing out of the part, which in turn made it too thin. This caused a hold-up in production. The parts had to be reworked to make them the proper thickness."

Carolyn and Harold suggested a new bleeder system that would maintain the flow of resin. This would maintain the proper size of the part. First year savings on the new bleeder system total $13,940. Both Carolyn and Harold earned $315.

Over 60 other Grummanites also earned cash awards for submitting Project Sterling suggestions. Their awards ranged from $25 to $290.

retirees

On behalf of our fellow workers, PLANE NEWS salutes the following men and women for their contributions to the company and wishes them well in their retirement. Those who have recently retired are:

Jean M. McNamara (5), William A. Martens (2), Richard J. Cashman (12), Henrietta Dinan (2), Jean Frayre (2), Harvey H. Turner (77), Charles Glynn (5), Francis Martila (7), Terenzio Giannone (28), Gladys E. Clerke (30), Filomena Rainone (2).

Going back to school?

Company plan takes bite out of tuition bills

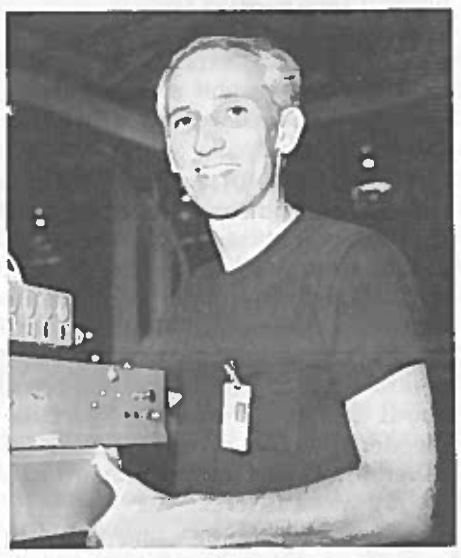
The fall season and its inevitable "back-to-school" sales are just around the corner, and many Grummanites may already be thinking about returning to college.

However, rising tuition costs at virtually every university campus has priced many potential students out of the classroom. Fortunately for Grummanites, the Career Education and Training Office offers tuition reimbursement for many business-related degree and non-degree courses of study.

Lorraine Alfino, administrator for the Tuition Reimbursement Program, says, "The program Grumman offers is designed to give Grummanites a chance to get a college education without the burden of high tuition costs. Students can take courses towards a bachelor's degree, a masters — even a PhD, or non-degree course work, and get some or all of their tuition expenses paid for by Grumman."

Alfino notes that some 2,200 Grummanites are currently involved in the program. To qualify for reimbursement, courses must be taken at a regionally accredited two or four year university. "Contrary to a popular misconception," says Alfino, "courses do not have to be directly related to a person's present position at Grumman. Tuition will be reimbursed as long as the course work is related to any of the business interests of the company.

'The program is especially useful for people who wish to advance their careers....'



James Ketcher

"For instance," she explains, "secretaries and mechanics could very well take a course in computers, and, assuming they received the required grades, Grumman will pick up the tab for tuition."

Tuition reimbursements are made on a percentage basis depending on a student's grades in the course. A student must score at least a "C" to receive any payment of tuition costs. Based on grades, the amount of tuition expenses covered by the program is as follows: "A"= 100 percent; "B"= 85 percent; and "C" = 75 percent. Grades below "C" do not receive tuition reimbursement.

"Generally speaking, the company program covers just about all engineering, business, math, economics and computer courses, as well as many others. If a Grummanite has a question as to whether or not a particular course he or she is interested in taking is covered by tuition reimbursement, he can call the Career Education and Training office," comments Alfino.

In order to receive tuition reimbursement for a course you are taking, an application (available at all Employee Services (ES) offices) has to be on file in the Career Education and Training Office no later than 30 days after the first day of the class.

James Ketcher, a Plant 2 jig and fixture builder, says "the reimbursement program is especially useful for people who wish to advance their careers but couldn't otherwise afford to go back to school."

Jim is enrolled as a non-matriculated student at the State University of New York (SUNY) at Farmingdale where he has been taking courses in mechanical technology and graphics design. "It's a good program all around. . .an effective way for the company to get better educated employees and an economical way for employees to further their educations and potentially improve their careers," he states.

William DeMorris, a senior designer in Plant 110 Retrofit Engineering Directives, is currently in between terms at Polytech Institute of New York located in Farmingdale. Bill is in Polytech's management technology masters degree program. In this fall's semester, he is registered for courses in "Computers and Management," and "Management Planning Processes."

"I've been taking courses at Polytech for several years now in pursuit of my masters degree in Business Management. I hope that when and if a management position within Grumman presents itself, I will be qualified and ready to take it," says Bill.

"The Tuition Reimbursement Program has been invaluable to me. With tuition costs being as high as they are I really don't know if I would have been able to continue my education this far without the company's financial support," he adds.

William DeMorris

Nanette Clark

"So far, I have gotten my bachelor of business administration degree, I am currently working on my masters degree, and I look forward to going for a PhD. in Industrial Engineering perhaps as early as January 1986, and all of my tuition expenses have been paid for by Grumman. I'll tell you, it's some deal."

Nanette Clark, an administrative secretary in the Career Education and Training Office, and a college student herself since 1979 at SUNY Farmingdale, agrees with Bill's assessment of the program. "The company's financial support has been very helpful to say the least. Without the tuition reimbursement, it would be difficult if not impossible for me to continue my college education," she says.

'The program also gives students an incentive to get good marks....'

Nanette is studying for an associates degree in business administration in which she says she is "about a quarter of the way completed."

"The program also gives students an incentive to get good marks since you are reimbursed based on your grades. I think it really works out well for everyone involved and I hope to get my degree through it."

Grummanites who are interested in further information about the Tuition Reimbursement Program can call Lorraine Alfino at Ext. (111) 53385.

obituaries

GEORGE S. KELLOGG of Research, Plant 26, died July 23 at the age of 63. He had been with the company since 1973 and resided at 26 Greatwater Ave., Massapequa.

GEORGE E. KOEPER of Plt. 14/26 Inst. Mgmt & Staff, Plant 5, died July 23 at the age of 60. He had been with the company since 1966 and resided at 14 Arvans Court, Huntington Station.

JOHN J. GARLAND of Alodine, Plant 2, died July 30 at the age of 49. He had been with the company since 1974 and resided at 526 Plainview Road, Plainview.

Retiree obituaries

James A. Reardon of 150 Commonwealth Rd., Massapequa, died July 22, 1984. He retired in 1975.

Matthew G. Fraas of Rt. 2, Box 317T, Deming, NM, died July 22, 1984. He retired in 1970.

Louis Pastore of Rt. 21, Box 863, N. Ft. Myers, FL, died July 13, 1984. He retired in 1974.

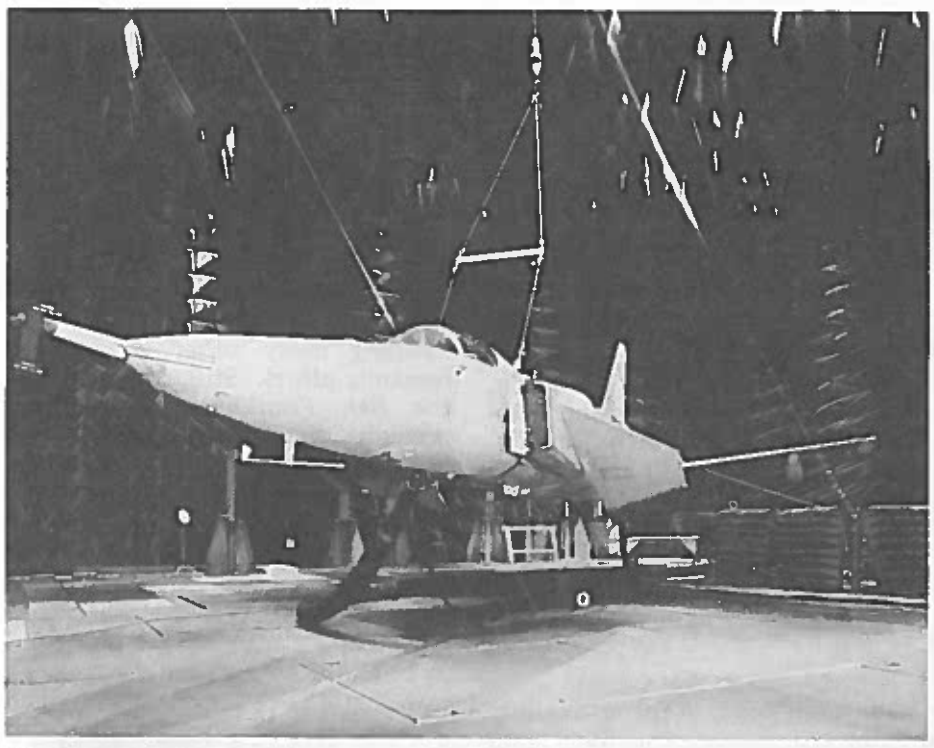
Stephen P. Marchioli of 206 Tiffany Drive, Massapequa Park, died July 30, 1984. He retired in 1978.

Personals

My son and daughter wish to thank our friends, co-workers and ESO for their kind expressions of sympathy during the recent loss of my wife. **Bill Peet**

My family and I wish to thank our friends and co-workers at Grumman for their support and sympathy during the recent loss of my father. **Edward Raulsome**

My family and I wish to express our sincere thanks and appreciation to my friends, co-workers and ESO for their kind expressions of sympathy during the recent loss of my father. **Bernadine R. Ellensohn**



Final exams. *In Calverton's anechoic chamber (L), electromagnetic interference tests are done. Engine runs (above) are conducted following painting of the X-29's inlet ducts (bottom L). The Fuel Lab (bottom R) was the X-29's first stop at Calverton.*

X-29 undergoing battery of tests

The X-29A advanced technology demonstrator aircraft has been getting a workout at Calverton this summer. There, engineers and technicians are completing the last round of tests before the plane leaves next month for California and its first flight.

There are actually two X-29 aircraft. The one that's being tested is also the one that will be test flown at California's Edwards Air Force Base in November. The second plane will be functionally complete, but isn't scheduled to be flown. It will serve primarily as a backup plane. It's also the one that will be on display at the X-29 rollout ceremony on August 27. Just recently, it got a fresh coat of paint.

"We've had better success with the tests than you would expect for a brand-new airplane," says Glenn Spacht, X-29 deputy program director. "Things are going very well."

For aircraft number-one, the first stop at Calverton was the Fuel Lab. There, tests ensured that the X-29's fuel system works correctly. This was accomplished using a special device to simulate fuel being drawn into the engine. In addition, checks were made on the pilot's status lights. The fuel system was calibrated so that when the pilot's gauge says the tank is empty, it's empty.

Stabilizing influence

The Fuel Lab tests are also necessary for pinpointing the actual weight and center of gravity (CG) of the X-29. "The CG has to be in the proper location in order for the plane to fly properly," Spacht says. "This test is just a confirmation that the CG is in the right spot — not too far forward, not too far aft."

Next is what's known as an instrumentation end-to-end. In this test, the instrumentation — right down to the system software — is checked.

A major test is the green engine run. The engine, inlet ducts, and the start system are run for the first time and monitored, and the engine is calibrated. The accessory systems are also tested, since this is the first time they have been run by the aircraft's own hydraulics.

The X-29's emergency power unit (EPU) gets tested. Then, a van housing a special computer is wired to the X-29's on-board computer. The computer "tells" the flight control system that the plane is in flight, enabling engineers and technicians to ensure the system responds properly.

Sometime near the rollout date, X-29 number-one will undergo what's known as an electromagnetic compatibility/electromagnetic vulnerability (EMC/EMV) test. The EMC ensures that the flight control system will not be affected by internal electromagnetic pulses, such as those that occur when switches are turned on or off. The EMV tests the system's invulnerability to outside emissions, such as those emitted by another plane's radar.

The task ahead

The aircraft will get painted just before its taxi tests. This series of tests takes four to five days. In a "washboard test," the aircraft is taxied slowly over cable fastened to the runway. This checks the flight control system for sensitivity to vibration. Next are low-speed (up to 65 knots) and high-speed (100 knots) taxi texts.

The X-29 will be shipped to California in September. There it will undergo yet another round of tests before its maiden flight in November.

Grumman's sole undersea venture: a yellow sub called Ben Franklin

Fifteen years ago this month, Grumman was "deeply" involved in its first and only "undersea adventure," as the *Ben Franklin* research submarine drifted silently along the Gulf Stream. The Grumman-Piccard PX-15 submersible research vessel was designed and built by Dr. Jacques Piccard, a world renowned oceanographic scientist, working as an executive consultant for Grumman's Ocean Systems division.

The *Ben Franklin* was launched July 14, 1969 from what was then Grumman Aircraft Engineering Corporation's West Palm Beach, Florida Ocean Systems operational base. The ship's mission was a 1,444-mile Gulf Stream underwater voyage to gather data on the Atlantic Ocean's peculiar warm water flow up the Eastern seaboard of the United States. An additional aim of the mission was to generate data on "man-machine interface:" how man operates in a closed ecological environment for the National Aeronautics and Space Administration (NASA).

The white and yellow *Ben Franklin* carried six crew members on its historic oceanographic mission, including its Grumman skipper, Don Kazimir. Kazimir said then of his four-week undersea voyage: "The mission was just great. The boat worked beautifully throughout and it was a very enjoyable and educational experience."

Other members of the experimental sub's team included: Dr. Piccard; Frank Busby, U.S. Navy Oceanographic scientist; Cmdr. Ken Haigh, Royal Navy acoustician; NASA science engineer, Chet May; and Swiss pilot, Edwin Aebersold.

NASA's Chet May told a Washington, D.C. press conference on the day after surfacing from his 31-day undersea voyage, that he was "very pleased with the results of the mission as they might apply to the manning of future space stations." He noted that the crew's "high morale and ability to perform maintenance and scientific tasks, together with the maintenance of a habitable environment during the long voyage, provided much useful information to be applied to the space program."

According to Walter Muench, Grumman retiree and former program manager for the *Ben Franklin*, "the information gathered on the psychological and physiological effects of human confinement on extended missions is still in use today as a basis for continued research being done by NASA in space."

Muench notes that "rising interest during the 1960s in oceanographic studies — for their own worth and as related to space — spurred Grumman's involvement in the field with the *Ben Franklin* and its Gulf Stream mission."

Grumman signed Jacques Piccard on as a consultant in 1966 as part of a then-popular aerospace industry movement to diversify into oceanographic research. "In fact, at the time, the government was very seriously considering the creation of what we called a 'wet NASA' — an agency for oceanographic research and exploration set up just like the space agency. With the *Ben Franklin* project and our association with Piccard — a world renowned leader in this field, Grumman was establishing itself as a frontrunner in the design and manufacturing of oceanographic research vessels," Muench adds.

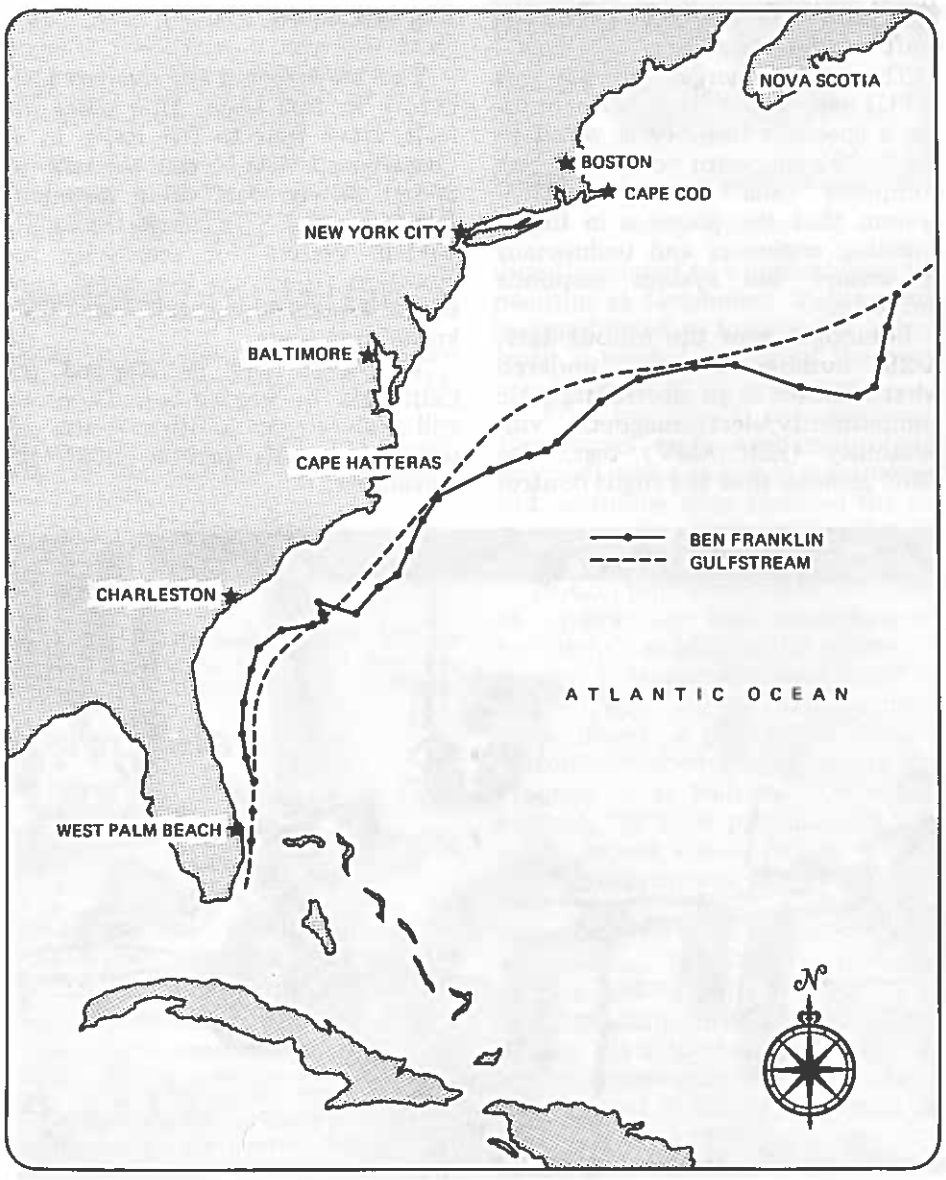
Government and industry interest in oceanography waned in the 1970s when steep inflation forced deep budget cuts in NASA and virtually every other government research effort. Still, Muench says the *Ben Franklin*'s Gulf Stream mission "was a real success in light of what we and others in the field of ocean studies were trying to do at the time. The mission collected over one million bits of data for the Navy's Oceanographic office as well as the physical and psychological data for NASA."

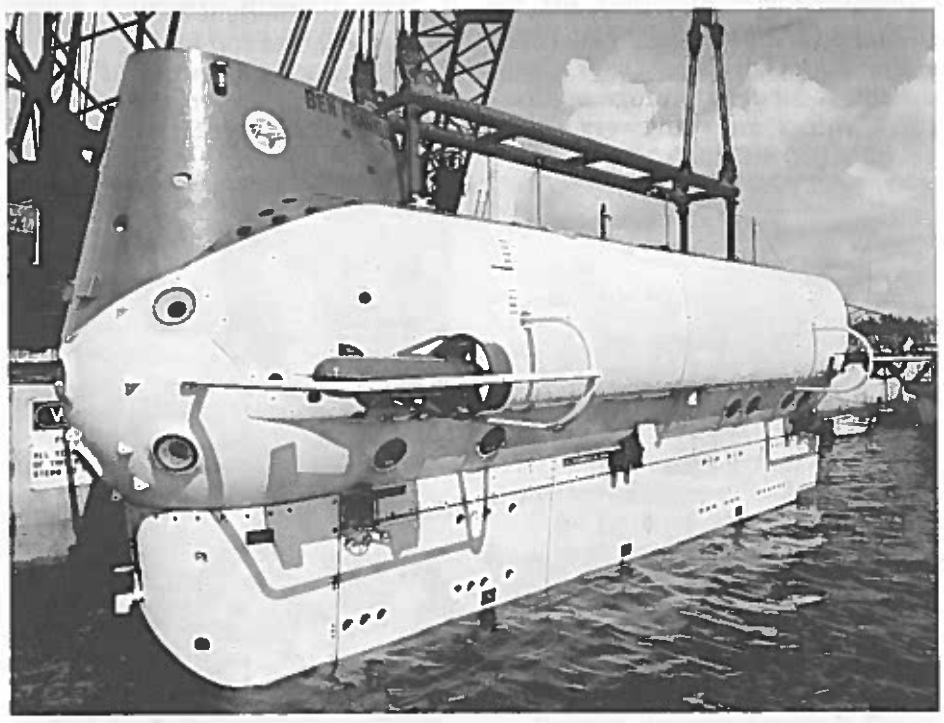
In addition to its success from an informational standpoint, Muench says the *Ben Franklin* program also succeeded in creating a "very special feeling of 'esprit de corps' among those involved — from the crew members of the vessel itself and the Navy Support ships to the land-locked program engineers. It was truly a unique project, both in its undertaking and in the enthusiasm that it generated."

Enthusiastic team

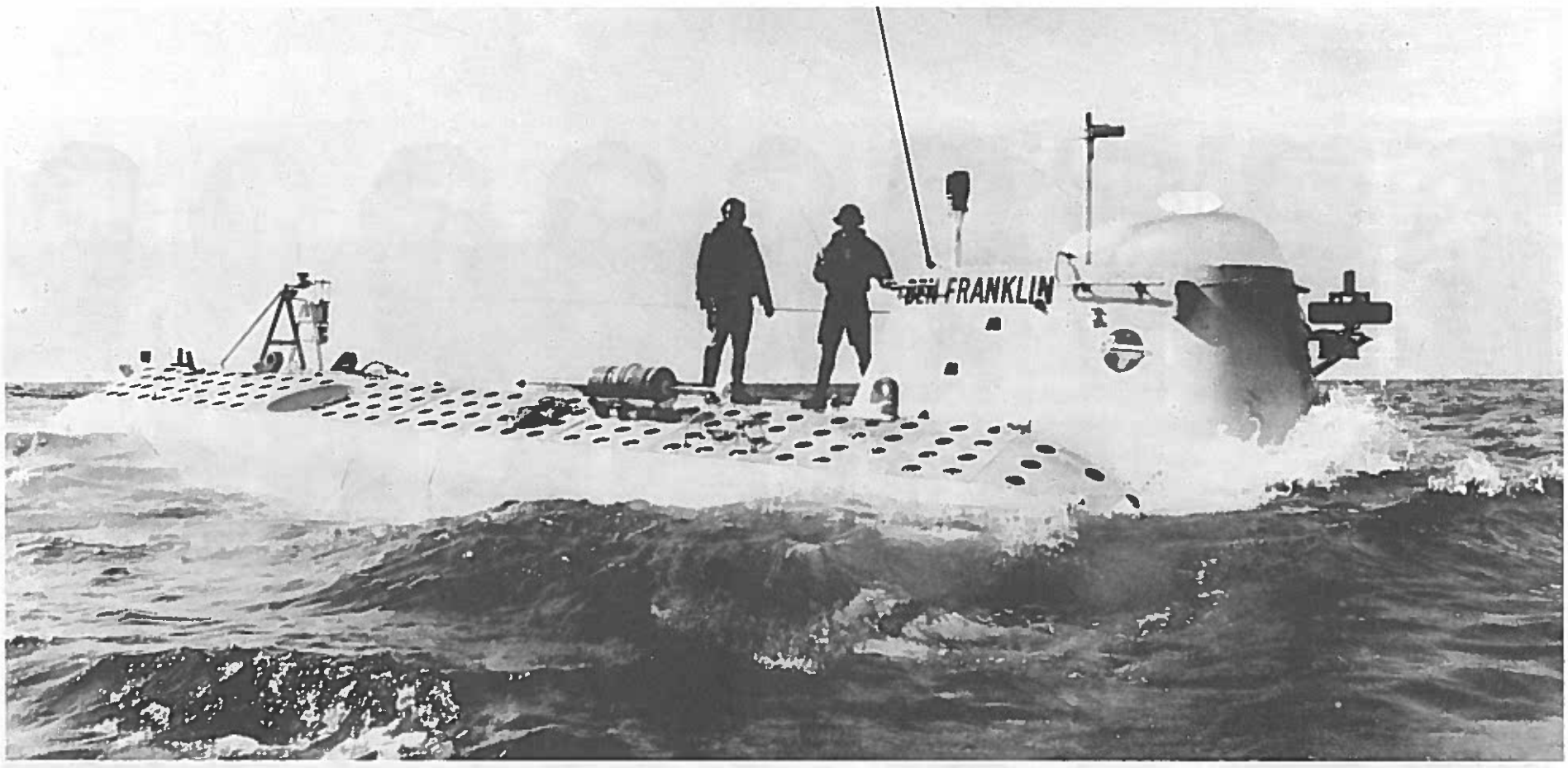
That enthusiasm was also remembered by Dick Opsahl, a director of technical liaison for Tech Ops in Plant 35 and program manager for the European construction of the *Ben Franklin* from 1966 — 1968. Opsahl says the program "offered a fascinating challenge for Grumman and was carried out with amazing cooperation and smoothness considering the diverse nature and backgrounds of everyone involved."

Opsahl was stationed in Switzer-





Ready for the plunge. *The white-and-yellow Ben Franklin submarine, made by the Grumman/Piccard team, carried six crew members on its historic oceanographic mission.*



Historic summer voyage. *During the summer of '69, the Grumman-Piccard submarine named Ben Franklin made its historic 1,444-mile Gulfstream underwater voyage to gather data on the Atlantic Ocean's peculiar warm water flow up the Eastern seaboard of the U.S.*

land to oversee the actual construction of the Piccard-designed submarine. Subcontractors from Italy, Germany and Switzerland were involved in the manufacturing of the vessel. While he was already fluent in German when he was assigned to the project, Opsahl notes that he had to take a crash course in French before leaving for Europe and further courses while he was there. "The day-to-day business communication was conducted in French, especially since that was Jacques Piccard's native language. Doing my job and learning French at the same time was pretty interesting, to say the least. I eventually became fluent in French though, and it helped me make some very good friends over there. A nice fringe benefit of the job," he says.

Railroad tunnel specs

An interesting aside to the European construction of the *Ben Franklin*, says Opsahl, were the size limitations placed on the vessel. "Our design parameters for the size of the *Ben Franklin* were actually governed by two things: the height of the railroad tunnels in Switzerland and the height of Dr. Piccard. We had to make the ship small enough to get through the railroad tunnels on its way from the mountains to the coast — and big enough for Dr. Piccard, who is over six feet tall, to be able to work inside comfortably. Not exactly the usual engineering parameters you encounter in the manufacturing business," he notes.

After its construction and testing in Switzerland, the *Ben Franklin* was dismantled and shipped to Grumman's West Palm Beach, Ocean Systems operational center. There, the project's Grumman team reassembled and modified the vessel, adding Grumman-designed fiberglass ballast tanks. The ballast tanks were attached to the ship's cylindrical 1.4-inch-thick steel hull to provide stability and floatability when it was on the surface.

Christening in '68

On August 21, 1968, the Grumman-Piccard PX-15 submersible was christened *Ben Franklin* by Louisa J. Castle, the great-great-great-great-great-granddaughter of Benjamin Franklin. Famed inventor, scholar and statesman, Franklin was responsible for the first research and charting of the Gulf Stream over two centuries ago.

The ship underwent testing for close to a year at the West Palm Beach operational center before it was launched on its Gulf Stream mission.

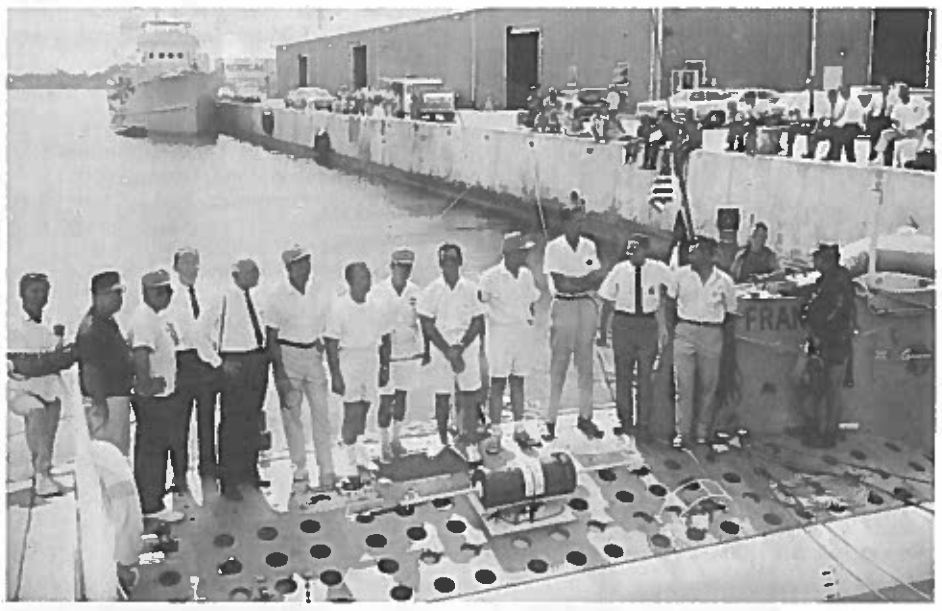
A Long Island celebration

Edmund Rabut, program administrator for the *Ben Franklin*, and now a Grumman retiree, says he remembers well the launching of the research submarine some 15 years ago. "Those of us who were working on the project here on Long Island gathered on a beach in Centerport where we staged our own 'mock' submersible launching, simultaneous with that of the *Ben Franklin*. We had a radio hook-up with Florida so that we would know when the ship was launched. We even made a model of the *Ben Franklin* out of empty beer cans and other scraps, painted with the names of the program managers and a version of the Grumman insignia. It was a joyous occasion for everyone in the program up here and our way of sharing the excitement of the actual Florida launching," he says.

Rabut comments that the lift-off on July 17, and subsequent mission of the Apollo 11, "stole a lot of the thunder from the *Ben Franklin* at the time. Still, the mission and the whole *Ben Franklin* program was significant and successful for all concerned. Everyone who was a part of the *Ben Franklin* and the Gulf Stream mission can be proud of contributing to a considerable achievement by Grumman. And I think that everyone involved has fond memories of the teamwork and the sense of adventure that characterized that time in our past."

Unhappy ending

The *Ben Franklin* was sold to the Chicago Bridge and Iron Company in 1972 after several years of use as an experimental submersible vessel and display model. It was subsequently moved to Vancouver, Canada, where it was cannibalized for parts for its sister ship the *Auguste Piccard*, an oceanographic tourist vessel.



Ready to dive. *Standing on the deck of the Ben Franklin in West Palm Beach are (L to R) Harold Dorr, relief pilot; unknown; Bill Rand, operations manager; Walter Muench, program director; Bill Zarkowsky, vice president; Ken Busby, Navy; Erwin Aebersold, chief engineer for Piccard; Chet May of NASA; Don Kasimir, Grumman pilot; Ken Haigh, British exchange oceanographer; Jacques Piccard, designer-oceanographer; Lew Evans, Grumman president; and Walter Scott, director of Ocean Systems, with two unidentified divers.*

W.R. Harris

H.P. Ellison

L.L. Olivier

V.G. DeStefano

H.G. Broker

R.A. Krumenacker

A. Mielczarski

J.J. Koberlein

D.J. Bergen

E.L. LeCun

J.G. Amoroso

D.G. Myers

K.G. Wendel

R.H. Ambruster

R.L. Kreeb

R.W. Hilbert

J.A. Quarles

J.H. BelleOudry

O.K. Costello

C.B. Trimble

R.F. Kearney

D.J. Turner

R.L. Caporali

I.A. Stakem

S.J. Danos

A.M. Yevoli

service milestones

W.K. Langendorf

W.F. Carberry

R.B. Peterson

J.S. Jarrett

40

Thomas J. Holmes, Cap. Monitoring & Ctl. (2)

35

Edgar W. Tappen, Fus. Joining (1)
Edward J. Smatlak, PPM — Mil & Space (1)
Emanuel F. Gumbs Jr., Ctr. Sect. — Sub Assy. (2)
John W. Herlihy, Ctr. Sect. — Sub Assy. (2)
Roy W. Harvey, Fus. Assy. (2)
Robert P. Miller, Wing Inner Panl. (2)
Robert C. Booy, Q. C. Mech. Insp. (2)
Alexander Censoprano, Ctr. Sect. — Final (3)
Gustave E. Preiser, Honeycomb (3)
William H. Hale, I. E. Flow Seq. (3)
Walter S. Foray Jr., Trans. Ops. (4)
Maurice F. Greene, EF-111 Sys. Inst. (6)
Charles H. L'Hommedieu, Final Assy. Insp. (6)
Nicholas A. Evangelides, Ind. Eng. (7)
Joseph Heberlein, Maint. (12)
James J. Fitzpatrick, Elect. Test (14)
Martin Cohen, ILS Tech. Directives (25)
Ann M. Manelski, Gen. Comm. (30)
Anthony J. Crammer, Sub. Cont. Surv. (30)
Alex Adamcewicz, Mfg. Sch. (30)
Walter C. Martens, ILS Prod. Supt. Mgmt. (35)
William A. Small Jr., Tech. Reqmts. (40)
Eugene J. Coll, Operations (40)
Henry G. Mehl, Prog. Mgmt. (43)
George Felber, Corp. Instr. Flt. Data (45)
Wilford B. Brown, Jr., Thrust. Rev. & Nac. (77)
John Kendrick, Grumman Corp. (111)
Robert H. Rispaud, St. Augustine (265)

30

Eugene C. Burgess, Q. C. Lab. (2)
John R. Swenk, Sys. Des. (7)
Edward Silvia, Airport Ops. (7)
Robert W. Bailey, Air Traffic & Radio Comm (7)
Robert V. Biagiotti, ILS Prog. Mgmt. (9)
Felix J. Curasi, Struct. Des. (9)
Norman C. Palmer, Prod. Cont. (17)
Anna Sinicropi, Reqts. Plann. (30)
Thomas G. Cunniffe, Res. Mgmt. (30)
John G. Pastoral, Software Appl. (35)
Charles M. Checola, Matl. Mgmt. (77)
Joseph J. Ciccone, Struct. Des. (107)
Edward J. Lombardo, Veh. Struct. Anal. (107)
John H. Norris, Grumman Corp. (111)
Alfred F. Schaefer, Tech. Ops. Mgmt. (267)
Robert J. Anderson, Fld. Ops. (294)

25

William R. Harris, Fus. Assy. (1)
Harold P. Ellison, Welding (2)
Lino L. Olivier, Welding (2)
Vincent G. DeStefano, Mfg. Mgmt. (2)
Henry G. Broker, Jigs & Fix. (2)
Robert C. Lind, Jigs & Fix. (2)
Raymond A. Krumenacker, Maint. (2)
Alfred Mielczarski, Mach Insp. (2)
John J. Koberlein, Mech. Proc. Engr. (2)
William Nelson, Honeycomb Det. (3)
David J. Bergen, Maint. (3)
Michael N. Rocco, Prod. Spares (4)
Edmund L. LeCun, Corp. Inst. Sys. (5)

R.E. Wagoner

V.L. Romeo

Joseph G. Amoroso, Corp. Inst. Sys. (5)
Donald G. Myers, Inst. Test (5)
Kenneth G. Wendel, Model Shop (5)
Robert H. Ambruster, Inst. Test (6)
Robert L. Kreeb, F-14 Joining (6)
James F. Lindstrom, F-14 Struct. (6)
Ralph W. Hilbert, Corp. Inst. Flt. Des. (7)
Jeff A. Quarles, Cent. Recv. (24)
Lawrence M. Murphy, Insp. Mach. Parts (24)
Jacques H. BelleOudry, Comp. Des. (25)
Olaf K. Costello, Inv. Plann. & Anal. (30)
Charles B. Trimble, Gen. Sub-Cont. (30)
Robert F. Kearney, FAC Admin. (30)
Doris J. Turner, Cont. Rev. (30)
Renso L. Caporali, Sr. V.P. Technical Operations (35)
Isaac A. Stakem, ILS Comm. Cont. (35)
Stavros J. Danos, Fld. Dyn. (35)

(Continued on page 11)

scorecard

Softball diamond stars. *Grumman men's varsity softball team shortstop Karl Komyathy scooped up the MVP award in a winning effort by the Tomcats in the Independence Tournament held at Mitchel Field. At the trophy ceremony were: (L to R) Herb Mahoney, Recreation representative; Joe Cavalluzzo, varsity manager; Tomcat captain Tom Marion; Charles Fuschillo, Recreation manager; and MVP Komyathy.*

Varsity keeps rolling

The Grumman men's varsity softball team recently added several more games to its string of victories this season. The Tomcats came out of the losers bracket to win the Independence Class "B" Tournament held at Mitchel Field.

After losing their first game, the varsity squad got on the winning track by taking four straight games in the first half of the weekend tourney and then picking up three more the next day, finishing the tournament with a 7 - 1 record.

The Tomcats had to beat the winners' bracket team twice to win the tournament and did so handily by scores of 6-1 and 11-1. Grumman's Rick Smith pitched all eight games and was backed up by a Tomcat defense that gave up an average of only 2.6 runs per game. Meanwhile, offense managed to score at a seven runs-per-game pace.

Tomcat coach Joe Cavalluzzo says it was a "real total team effort. A truly skillful performance under pressure." Short stop Karl Komyathy was voted the tournament's Most Valuable Player for his 16-for-27 hitting performance. Outfielder Nick Catania swatted two home runs in the tourney, while Tony D'Ambrosio and Komyathy each had one.

The Tomcats' next scheduled outing will be over the Labor Day weekend when they will compete in the National Industrial Softball Tournament in Montgomery, Alabama.

Nite owl bowlers

Nite Owl bowlers take note — bowling time is near so get your team roster together and head down to Westbury Bowl on Thursday, September 6 at 1:00 a.m.

For further information, interested players can contact Bill Gilbertson at Ext. 57179; Anna Nicholson, Ext. 54056; or Recreation representative Herb Mahoney at the GRA office, Ext. 52133.

Call for gypsies

A general membership meeting for the Grumman Theater Guild will be held on September 11, 5:30 p.m. at Annie's Place on Broadway, Bethpage.

On the agenda for the meeting will be a membership drive for the technical staffing of the group's fall musical production of "Gypsy." The club is seeking newcomers to join in a team effort presenting its community theater productions.

A 20-year first

"I consider myself to be an erratic golfer . . ." says Joe Avanzato "good one day and so-so the next." Well, August 2 must have been one of those days because Joe shot a hole-in-one on Commack Hills Golf and Country Club's fourth hole.

Joe, a senior designer in Plant 106, has been playing golf for 20 years now, and has never had a hole-in-one. "I felt like I was walking on a cloud. It was quite an experience. It is the first hole-in-one in the league in 18 years." Joe's team is currently seventh in the Grumman Support Golf League.

"Just two weeks before, on the exact same hole," notes Joe, "I put the ball only 18 inches from the cup. I guess it was inevitable that I got it."

Hole-in-one. *Joe Avanzato, a Plant 106 senior designer, was 'walking on air,' after scoring his first hole-in-one in 20 years of golfing.*

Night time rollers

Attention night time bowlers — singles, couples and teams are needed for the Grumman Tuesday Nite Mixed League. The nite league will start rolling on September 11 with competition scheduled to run from 6:45 p.m. to 9 p.m.

For further information, contact: in Bethpage — Gene Burgess, Ext. 111-6420; in Great River — Dave Struller, Ext. 113-6377; in Calverton — Jerry Stephens, Ext. 117-7475 or Ken Becker, Ext. 117-6638.

calendar

(Continued from page 2)

Duplicate Bridge Club: every Thur., Recreation bldg., 6 p.m. Guests welcome. P. Gill, Ext. 115-8414.

Equestrian Club: every weeknight, Knoll Farm, Brentwood, 6 p.m. Grumman employees and immediate family only. J. Eisenhower, 115-6211.

Fencing Club: every Wed., 4:45 — 6:30 p.m., Recreation bldg. Free instructions, guests welcome. J. Hayne, Ext. 54945/P. Chaldaris, Ext. 53486.

Folk Dancer's Club: (Calverton) every Thurs., 2nd floor, Plant 6, lunchtime, Grumman employees only. J. Hamelman, Ext. 117-6835.

Klown Klub: every second Tues. of each month, Recreation bldg., 4:15 p.m. Guests welcome. M. Deyns, Ext. 57564.

Laughing off a loss. *Foxy Feathers, an Grumman Egg-league softball team, managed to laugh off a 13-10 plucking at the hands of radio station WBAB's Record Breakers in a recent challenge. Pictured above before the game began are: (L to R) Suzanne Defoe, Pl. 5; Peggy Fremgen, Pl. 40; Debbie Munroe, Pl. 40; Sandra Comitino, Pl. 2; Vicki Notarfrancesco, Pl. 25; and captain Gerri Walsh.*

milestones

(Continued from page 10)

Richard E. Spellerberg, Radar (40)
Ralph J. Siegel, Prog. Mgmt. EF-111 (40)
Andrew M. Yevoli, Prod. Cont. (43)
Walter K. Langendorf, Prog. Mgmt. (43)
William F. Carberry, Invent. Mgmt. (44)
Ronald B. Peterson, V.P. Corporate Development (111)
Michael S. Cocurullo, Grumman Corp. (111)
John S. Jarrett, Fld. Ops. (203)
Robert E. Wagoner, Fld. Ops. (279)
Robert H. Bornschein, Fld. Ops. (530)
Vincent Romeo, Grumman Energy Systems

Women's varsity team headed for the Nationals

For the fifth consecutive year, the Grumman women's varsity softball team has qualified for the National Industrial Softball Championship Tournament to be held in Cleveland, Tennesee over the Labor Day weekend.

The team accomplished this year's qualification by successfully defending their Long Island Industrial League Championship against three challengers in recent weekend play. Going undefeated in capturing the 1984 title, the Grummanites defeated teams from Century 21 (8-1) and Avis twice (3-2, 4-0).

The team's defensive play was nothing less than outstanding, as they allowed only three runs in as many games. Diane Vollmer and Ellen Swicord were especially noteworthy playing shortstop and leftfield, respectively. The infield combination of Vollmer and either Ann Fusco or Gail McGarry at second base turned five double plays in the three-game series, effectively curtailing the opposition's offensive threats.

MVP hitter

At the plate, the women's varsity was led by the tournament's Most Valuable Player (Joan Coady, who hit one triple and two runs-batted-in (RBIs) while compiling an .857 batting average. Denise Mauring contributed a .667 average to the team's offensive effort. The varsity was also helped by triples from Linda Schrage, Karen Parrinello, and Vollmer as well as a home run by Swicord.

Varsity coach Al Grillo says the team's prospects in the National Tournament "look very good if we continue to play well defensively and add a little bit to our offensive punch."

Tournament bound. *Having won the 1984 Long Island Industrial League Championship, the Grumman Women's varsity softball team is headed into its fifth National Industrial Softball Tournament in Cleveland, Tennessee over the Labor Day weekend. This year's roster includes: top row (L ro R) Barrie Hughlock (coach), Pl. 26; Al Grillo (manager), Pl. 35; Denise Manning, GHQ; Diane Vollmer, Pl. 28A; Bonnie Dressler, Pl. 26; Ellen Swicord, GHQ; Ann Fusco, Pl. 14; Gail McGarry, GHQ; Nancy Bradley (coach), Pl. 3. Bottom row (L to R) Bonnie Shenkman, Pl. 30; Joan Coady, Pl. 6; Donna Patsos, Pl. 18; Vicki Cecere, Pl. 247, Debbie McMillan, GHQ; Tracey Hopkins, GH GHQ; Karen Parrinello, GHQ; Linda Schrage, Pl. 15; (not shown-Janet Perinelli, Pl. 46; Kathy Ferguson, Pl. 242).*

Autumn tournaments

- ☐ Horseshoe – single
- ☐ Horseshoe – doubles
- ☐ Handball – single
- ☐ Handball – doubles
- ☐ Paddleball – doubles

Name .....

M/S ..... Ext .....

Partner .....

M/S ..... Ext .....

Mail to Recreation, A-01-28A, to arrive by Sept. 10th

Time for fall sign-ups

September is a big month for Grummanites interested in playing a variety of sports during the fall season. Tournaments will be held for competitors in handball, paddleball and horseshoes. All begin on Monday, September 17.

Bethpage Community Park is the site of the handball and paddleball tourneys this year, with horseshoes being pitched in the pits on the north side of Plant 3.

There will be separate tournaments in all three sports for the folks at Calverton and Great River.

To sign up, fill out the form on this page and send it to Grumman Recreation, Mail Stop A01-28A, no later than September 10th.

GRUMMAN
planenews

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